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FOREWORD

This report presents statistics pertaining to the activities of the Alberta Forest Service (AFS) during the 1984-85 fiscal year. Summary tables are provided for comparative analysis and observations of trends. Industrial statistics are provided where they are helpful in obtaining a provincial overview. Note that the Forest Protection Branch operates according to the calendar year rather than the April 1 to March 31 fiscal year.

ACKNOWLEDGMENTS

Tabular and graphical materials in this report were compiled by the AFS. Although monitoring of industrial reforestation activities is the responsibility of the Timber Management Branch, tabular data has been included in the Reforestation section of the report to provide an overview of reforestation.

A. TIMBER MANAGEMENT

1. Introduction

Timber production from public lands in 1984-85, excluding woodchips and slabs, totalled 6 600 271 cubic metres (m^3), a decrease of 712 820 m^3 from the previous year. Coniferous lumber and plywood logs accounted for 5 241 852 m^3, compared with 5 821 453 m^3 produced in 1983-84.

2. Timber Management Planning

The total number of active timber dispositions for this year is 37 025. Forest Management Agreements, Timber Licences and Commercial Timber Permits (CTP) accounted for 433 dispositions, and Local Timber Permits (LTP) and Tree Tags for 36 450. Table A1 summarizes the number of active timber dispositions over the past 10 years.

Table A1

TEN-YEAR SUMMARY
TIMBER DISPOSITIONS
1975 - 85

Year	Miscellaneous & Local Timber Permits and Tree Tags (TM66s)	Timber Licences and Commercial Timber Permits	Coniferous Timber Quotas and Deciduous Timber Allocations	Forest Management Agreements	TOTAL
1975-76	15 476	480	142	6	16 104
1976-77	15 282	450	145	6	15 883
1977-78	19 572	469	138	6	20 185
1978-79	26 842	385	135	6	27 368
1979-80	31 294	386	135	6	31 821
1980-81	44 787	394	143	7	45 331
1981-82	41 707	410	139	7	42 263
1982-83	42 198	427	148	7	42 773
1983-84	40 474	462	144	7	41 087
1984-85	36 450	427	142	6	37 025
Ten-Year Average	31 408	429	141	6	31 984

2a Forest Management Agreements (FMA)

Table A2 lists the companies that have entered into FMAs with the Province of Alberta. The table shows the annual allowable cut (AAC) allocated under each agreement.

Table A2

FOREST MANAGEMENT AGREEMENTS
1984 - 85

Forest Management Agreement Holder	Allowable Annual Cut	Management Plan Status
Alberta Energy Co. Blue Ridge	467 223 m^3 coniferous	Part 1 of Detailed Plan was submitted December 1, 1979 and is currently under review.
Canadian Forest Products Ltd. Grande Prairie	388 000 m^3 coniferous	Detailed Plan submitted March 1, 1981 has received approval.
Canadian Forest Products (Dell Acres) Hines Creek	9 000 m^3 coniferous	Detailed Plan was to be revised by October 31, 1985.
Procter and Gamble Inc. Grande Prairie	1 290 000 m^3 coniferous	Detailed Plan was approved January 17, 1978.
St. Regis (Alberta) Ltd. Hinton	1 052 000 m^3 coniferous	Detailed Plan to be revised by December 1986.
Weldwood of Canada Ltd. Slave Lake	241 000 m^3 deciduous	This FMA was previously held by Alberta Aspen Board Ltd. and is currently under revision. Totally new management plans will be required under the revised agreement.
TOTAL	3 447 223 m^3	

2b <u>Coniferous Timber Quota and Deciduous Timber Allocation Planning</u>

Of the 20 quotas issued in 1984-85, nine were sold, three were granted and eight resulted from amalgamations. The breakdown of quota issuance by forest is as follows:

Table A3

TIMBER QUOTA ISSUANCE

Forest	Issued			Number Amalgamated
	Granted	Sold	Amalgamation	
Athabasca	-	-	-	-
Bow/Crow	-	-	-	-
Edson	1	-	1	2
Footner Lake	-	-	-	-
Grande Prairie	-	-	-	-
Lac La Biche	-	-	-	-
Peace River	-	-	-	-
Rocky/Clearwater	-	-	4	8
Slave Lake	1	8	2	5
Whitecourt	1	1	1	2
TOTAL	3	9	8	17

Table A4

CONIFEROUS TIMBER QUOTA AND DECIDUOUS TIMBER ALLOCATIONS
CURRENT STATUS AS OF JUNE 1, 1985

Forest	Coniferous Timber Quota		Deciduous Timber Allocation	
	(number of)	(AAC in m^3)	(number of)	(AAC in m^3)
Athabasca	6	166 459	-	-
Bow/Crow	14	224 104	-	-
Edson	11	592 462	2	99 660
Footner Lake	10	479 682	-	-
Grande Prairie	1	70 132	-	-
Lac La Biche	7	107 943	-	-
Peace River	9	287 364	-	-
Rocky/Clearwater	25	163 087	1	11 845
Slave Lake	37	960 924	2	2 667
Whitecourt	22	567 759	2	76 806
TOTAL	142	3 619 916	5	190 978

3. Woods Operations

Timber harvesting operations on public land must be conducted in accordance with an approved operating plan (AOP). Field staff approved and/or checked 220 AOPs. Staff also conducted 2 049 woods inspections related to the approved AOPs.

4. Scaling

During this year 408 sample loads were check scaled. The total volume check scaled in 1984-85 was 16 646 m^3. The breakdown of check scaling by forest is as follows:

Table A5

CHECK SCALING
1984 - 85

Forest	Volume (m^3)	Loads (#)
Athabasca	-	-
Bow/Crow	1 111	32
Edson	4 770	138
Footner Lake	1 227	26
Grande Prairie	1 818	34
Lac La Biche	-	-
Peace River	1 862	37
Rocky/Clearwater	316	15
Slave Lake	2 629	58
Whitecourt	2 912	68
TOTAL	16 646*	408

* May not add because of rounding error

During this year 173 scaling permits and 11 scaling licences were issued. The breakdown of these figures are as follows:

Table A6

SCALING PERMITS AND LICENCES
1984 - 85

Personnel	Permits	Licences	Total
Industry	91	8	99
Alberta Forest Service	52	3	55
Students	30	0	30
TOTAL	173	11	184

5. Timber Audits

Seventy-six audits of timber volumes produced by industry were completed during the year. These audits included quadrant cutoffs for five quotas.

6. Sawmill Inspections

Field staff carried out 278 sawmill inspections in 1984-85. The number of inspections by forest is as follows:

Table A7

SAWMILL INSPECTIONS SUMMARY
1984 - 85

Forest	Sawmill Inspections
Athabasca	10
Bow/Crow	12
Edson	67
Footner Lake	5
Grande Prairie	-
Lac La Biche	3
Peace River	17
Rocky/Clearwater	50
Slave Lake	37
Whitecourt	77
TOTAL	278

Table A8

TIMBER DISPOSITIONS HANDLED
1984 - 85

Disposition Type	Granted (Issued)	Sold (Issued)	Not Sold	Offered For Sale	Total Issued
Coniferous Timber Quota	3	9	2	15	*20
Deciduous Timber Allocation	-	-	-	-	-
Coniferous Timber Licence	26	-	-	-	26
Deciduous Timber Licence	2	-	-	-	-
Commercial Timber Permit					
Coniferous (green)	12	23	8	38	35
Coniferous (dead)	8	1	-	1	9
Deciduous (green)	-	2	2	3	2
TOTAL	51	35	12	57	92

*Includes 8 quotas issued as result of amalgamations

A total of 36 sales were advertised in 1984-85; 14 of these were for Commercial Timber Permits or Deciduous Timber Allocations. Of the remaining sales, 19 were for miscellaneous items such as Local Timber Permit draws or sales of seized wood and 3 were sales of quotas.

Table A9

CONIFEROUS QUOTA ANNUAL ALLOWABLE CUT DISTRIBUTION BY FOREST AND SIZE CLASS (As of June 1, 1985)

Quota Size Class (Annual Allowable Cut m^3)	Athabasca		Bow/Crow		Edson		Footner Lake		Grande Prairie		Lac La Biche		Peace River		Rocky/ Clearwater		Slave Lake		Whitecourt		Total	
	m^3	%	m^3	%	m^3	%	m^3	%	m^3	%	m^3	%	m^3	%	m^3	%	m^3	%	m^3	%	m^3	%
0 - 1 000	-	-	-	-	969	-	-	-	-	-	516	-	506	-	3269	0.1	1052	-	564	-	6876	0.2
1 000 - 5 000	2547	0.1	11612	0.3	6952	0.2	4581	0.1	-	-	6339	0.2	4071	0.1	29119	0.8	3554	0.1	24337	0.7	93112	2.6
5 000 - 10 000	-	-	15789	0.4	8106	0.2	6574	0.2	-	-	7030	0.2	-	-	35673	1.0	36928	1.0	-	-	110100	3.0
10 000 - 20 000	-	-	53617	1.5	12627	0.3	15679	0.4	-	-	-	-	-	-	33733	0.9	79651	2.2	50928	1.4	246235	6.8
20 000 - 40 000	115865	3.2	52581	1.5	83808	2.3	83961	2.3	-	-	24271	0.7	98185	2.7	61293	1.7	450661	12.4	87749	2.4	1058374	29.2
40 000 - 60 000	48047	1.3	90505	2.5	-	-	50594	1.4	-	-	-	-	111272	3.1	-	-	195290	5.4	157475	4.4	653183	18.0
60 000 - 80 000	-	-	-	-	-	-	-	-	70132	1.9	69787	1.9	73330	2.0	-	-	-	-	75966	2.1	289215	8.0
80 000 - 100 000	-	-	-	-	-	-	98596	2.7	-	-	-	-	-	-	-	-	193788	5.4	170740	4.7	463124	12.0
+100 000	-	-	-	-	480000	13.3	219697	6.1	-	-	-	-	-	-	-	-	-	-	-	-	699697	19.3
TOTAL	166459	4.6	224104	6.2	592462	16.4	479682	13.3	70132	1.9	107943	3.0	287364	7.9	163087	4.5	960924	26.5	567759	15.7	3619916	100.0

Table A10

CONIFEROUS QUOTA
DISTRIBUTION BY FOREST AND SIZE CLASS
(As of June 1, 1985)

Quota Size Class (Annual Allowable Cut m^3)	Athabasca		Bow/Crow		Edson		Footner Lake		Grande Prairie		Lac La Biche		Peace River		Rocky/ Clearwater		Slave Lake		Whitecourt		Total	
	no.	%	no.	%	no.	%	no.	%	no.	%	no.	%	no.	%	no.	%	no.	%	no.	%	no.	%
0 - 1 000	-	-	-	-	2	1.4	-	-	-	-	1	0.7	1	0.7	6	4.2	2	1.4	1	0.7	13	9.2
1 000 - 5 000	1	0.7	4	2.8	3	2.1	1	0.7	-	-	3	2.1	1	0.7	9	6.3	2	1.4	8	5.6	32	22.5
5 000 - 10 000	-	-	2	1.4	1	0.7	1	0.7	-	-	1	0.7	-	-	5	3.5	5	3.5	-	-	15	10.6
10 000 - 20 000	-	-	4	2.8	1	0.7	1	0.7	-	-	-	-	-	-	3	2.1	5	3.5	4	2.8	18	12.7
20 000 - 40 000	4	2.8	2	1.4	3	2.1	3	2.1	-	-	1	0.7	4	2.8	2	1.4	17	12.0	3	2.1	39	27.5
40 000 - 60 000	1	0.7	2	1.4	-	-	1	0.7	-	-	-	-	2	1.4	-	-	4	2.8	3	2.1	13	9.2
60 000 - 80 000	-	-	-	-	-	-	-	-	1	0.7	1	0.7	1	0.7	-	-	-	-	1	0.7	4	2.8
80 000 - 100 000	-	-	-	-	-	-	1	0.7	-	-	-	-	-	-	-	-	2	1.4	2	1.4	5	3.5
+100 000	-	-	-	-	1	0.7	2	1.4	-	-	-	-	-	-	-	-	-	-	-	-	3	2.1
TOTAL	6	4.2	14	9.9	11	7.7	10	7.0	1	0.7	7	4.9	9	6.3	25	17.6	37	26.1	22	15.5	142	100.0

Table A11

TIMBER HARVEST FROM PROVINCIAL CROWN LANDS
DISTRIBUTION BY DISPOSITION TYPE
1984 - 85
(m^3)

Product/Species	FMA	CTL	CTP	DTL	DTP	LTP	FPP	Other	Total
Sawlog/Peeler Log									
Coniferous	1 542 949	2 170 323	1 203 681	5 783	30 299	285 798	3 019	-	5 241 852
Deciduous	-	13 600	670	108 264	213 903	33 874	395	-	370 706
Round Timber									
Coniferous	678	3 943	15 376	-	-	49 721	3 813	-	73 531
Pulpwood									
Coniferous	698 095	20 528	191	-	-	25 377	4	-	744 195
Deciduous	57 810	-	-	-	2 575	436	-	-	60 821
Fuelwood									
Coniferous	3	1	-	-	-	5 816	49 671	-	55 491
Deciduous	-	-	17	-	-	11 238	29 519	-	40 774
Railway Ties									
Coniferous	-	9 472	2 967	-	414	-	-	-	12 853
Lath									
Coniferous	-	-	-	-	-	48	-	-	48
Total Volume									
Coniferous	2 241 725	2 204 267	1 222 215	5 783	30 713	366 760	56 507	-	6 127 970
Deciduous	57 810	13 600	687	108 264	216 478	45 548	29 914	-	472 301
Total	2 299 535	2 217 867	1 222 902	114 047	247 191	412 308	86 421	-	6 600 271
Christmas Trees	-	-	-	-	-	5 124	32 849	13 685	51 658
Transplants (number)	-	-	-	-	-	2 382	13 128	-	15 510

Table A12

TIMBER HARVEST FROM PROVINCIAL CROWN LANDS
DISTRIBUTION BY FOREST
1984 - 85
(m^3)

Product/Species	Athabasca	Bow/Crow	Edson	Footner Lake	Grande Prairie	Lac La Biche	Peace River	Rocky/ Clearwater	Slave Lake	Whitecourt	FMA	Other	Total
Sawlog/Peeler Log													
Coniferous	129 931	176 182	449 643	394 213	269 483	202 177	778 953	132 639	542 161	621 521	1 542 949	-	5 241 852
Deciduous	25	1	113 162	1	516	1 087	75	13 030	115 870	126 939	-	-	370 706
Round Timber													
Coniferous	45	9 401	17 469	264	2 378	6 035	1 650	28 559	1 524	5 528	678	-	73 531
Pulpwood													
Coniferous	-	3	45 916	-	1	-	-	-	-	180	698 095	-	744 195
Deciduous	-	-	-	-	2 575	-	-	-	-	436	57 810	-	60 821
Fuelwood													
Coniferous	3 728	33 787	4 151	1 512	1 644	2 389	1 894	3 420	1 551	1 378	3	34	55 491
Deciduous	4 336	4 774	2 054	1 150	2 750	3 389	1 172	11 782	3 220	4 773	-	1 374	40 774
Railway Ties													
Coniferous	-	-	7 184	-	-	-	-	3 177	476	2 016	-	-	12 853
Lath													
Coniferous	-	-	-	-	-	-	-	48	-	-	-	-	48
Total Volume													
Coniferous	133 704	219 373	524 363	395 989	273 506	210 601	782 497	169 843	545 712	630 623	2 241 725	34	6 127 970
Deciduous	4 361	4 775	115 216	1 151	5 841	4 476	1 247	24 812	119 090	132 148	57 810	1 374	472 301
Total	138 065	224 148	639 579	397 140	279 347	215 077	783 744	194 655	664 802	762 771	2 299 535	1 408	6 600 271
Christmas Trees	2 295	15 133	3 195	167	1 967	1 076	865	5 730	1 538	6 003	-	13 689	51 658
Transplants (number)	1 112	4 600	449	90	454	811	77	4 978	731	2 208	-	-	15 510

Table A13

TEN-YEAR PRODUCTION SUMMARY
1975 - 85

Product		1975-76	1976-77	1977-78	1978-79	1979-80	1980-81	1981-82	1982-83	1983-84	1984-85	Average
Lumber and Plywood Logs												
Coniferous	(m^3)	2 140 853	2 579 461	2 882 231	2 936 284	3 910 597	3 782 445	4 063 284	4 122 333	5 821 453	5 241 852	3 748 079
Deciduous	(m^3)	24 166	2 859	11 632	24 993	17 949	106 206	131 706	116 021	351 384	370 706	116 062
Round Timber												
Coniferous	(m^3)	97 268	181 163	216 821	81 217	170 732	144 031	141 747	158 063	187 785	73 531	145 236
Deciduous	(m^3)	1 350	-	74	401	611	4 166	8 723	2 753	468	-	1 855
Pulpwood												
Coniferous	(m^3)	1 728 864	1 579 038	1 639 787	1 545 078	1 580 178	1 326 305	1 111 539	1 010 501	698 049	744 195	1 296 353
Deciduous	(m^3)	2 125	2 520	10 809	2 035	6 774	94	3 456	1 802	117 893	60 821	20 833
Woodchips	(m^3)	160 409	316 577	538 746	879 560	798 069	790 000	859 625	853 307	1 303 947	1 443 123	794 336
Fuelwood												
Coniferous	(m^3)	8 383	29 346	28 768	41 964	36 618	45 158	47 312	79 068	72 128	55 491	44 424
Deciduous	(m^3)	2 963	20 038	18 345	18 134	27 807	21 311	38 229	51 531	52 288	40 774	29 142
Railway Ties	(m^3)	48 396	35 224	27 582	21 702	13 663	23 520	17 817	17 996	12 643	12 853	23 140
Slabs	(m^3)	377	354	344	319	65	15	237	225	593	249	278
Lath	(m^3)	1 837	-	2 409	301	82	65	220	63	-	48	503
Christmas Trees	(number)	18 367	17 702	23 902	30 727	34 291	37 396	47 495	50 453	42 605	51 658	35 460
Transplants	(number)	27 050	37 644	28 507	61 377	215 158	36 384	47 487	15 941	20 842	15 510	50 590
TOTAL VOLUME*	(m^3)	4 056 205	4 429 649	4 838 458	4 672 109	5 765 011	5 453 301	5 564 033	5 560 131	7 314 091	6 600 271	5 425 626

*Excludes woodchips and slabs

B. REFORESTATION AND RECLAMATION

1. Introduction

The Reforestation and Reclamation Branch is responsible for all AFS reforestation projects, reclamation projects, the provincial forest genetics and tree improvement programs and the Pine Ridge Forest Nursery. The following summarizes the activities of each section during 1984-85.

2. Reforestation

Reforestation surveys were completed on 24 073 hectares (ha) of cutover land including 9 873 ha of post-harvest surveys and 14 200 ha of regeneration surveys. Of the area surveyed for regeneration, 76.5 per cent was found satisfactorily stocked according to existing provincial standards (see Table B1).

Silviculture treatments completed by the AFS included mechanical scarification of 6 911 ha, seeding of 5 303 ha, planting of 7 334 ha (8 831 160 seedlings) and thinning of 68 ha. Cone collection totalled 1 128 hectolitres (hl) of lodgepole pine cones. Only lodgepole pine cones were collected in 1984 due to the absence of a spruce cone crop (Table B3).

The Maintaining Our Forests Afforestation Program (MOF) funded through the Alberta Heritage Savings Trust Fund, included 5 233 ha of stocking surveys, land clearing of 1 216 ha, 8 177 ha of mechanical scarification, 142 ha of chemical site preparation for planting and the planting of 8 124 ha with 10 349 161 seedling trees (Table B7 and B8).

A total of 403 ha were aerially seeded, 288 ha of young plantations were released from competition with chemicals and the brush was removed manually on 6 ha. Fertilization to promote release of planted stock was completed on 9 ha.

3. Reclamation

Work was completed on 34 reclamation projects in the Green Area. The major surface disturbances reclaimed and cleaned up affected approximately 110 km of abandoned access roads, trails and seismic lines, and approximately 49 ha of abandoned sites such as oil and gas wells, coal mines, sand and gravel pits, sawmills, campsites, dilapidated improvements, a sewage lagoon and motor vehicle and garbage dumps.

The AFS contributed directly to the implementation of the joint government/industry reclamation research projects by planting woody plants in the oil sands area, and in the management of contracted reclamation research. A new reclamation field trial with pine and spruce was established, and previous trials in the Eastern Slopes and the oil sands area were maintained and assessed.

4. Genetics and Tree Improvement

Expansion of the genetics and tree improvement laboratory and greenhouse complex at Pine Ridge was completed. This will permit increased co-operative programs with the Forest Management Agreement holders. Production of plant-

ing stock was started for two white spruce seed orchards at Pine Ridge and one white spruce orchard near Grande Prairie. The latter orchard is a joint government/industry project. Four new genetics research plantings were established and greenhouse seeding completed for eight additional field experiments.

Sixty-three superior white spruce trees were located in natural stands in the Footner Lake and Lac La Biche Forests. Expansion of the clone bank at Pine Ridge continued with the addition of 15 white spruce clones. Twenty-five new seedlots were added to the genetics seed bank. Experimental planting stock production consisted of 40 378 seedlings, 1 439 grafts and 2 370 potted rootstock trees.

5. Pine Ridge Forest Nursery

During the year, the Pine Ridge Forest Nursery shipped its 100 millionth seedling since the start-up of operations in 1978. For the first time the underground bareroot cold storage facilities were put into use with nearly three million frozen seedlings placed there. Land clearing and breaking in the main Genetics area was completed and another new area was cleared to be put into production in 1985. The Research and Investigations Program is continuing to provide technical assistance and monitoring growth rates of seedlings. A study in co-operation with the Research Branch to develop a rodent repellent for tree seedlings was started. Containerized seedling production dropped from a high of 20 223 917 in 1983-84 to 12 502 746 seedlings in 1984-85. There were 14 326 688 containerized seedlings shipped for planting this past year. The bareroot seedling inventory now stands at 27 583 207 seedlings in the fields. A total of 9 383 273 bareroot seedlings were shipped in 1984 and another 11 930 830 were lifted for shipping in 1985. Due to an early freeze-up, bareroot lifting was not completed and another two million seedlings will be lifted in the spring for shipping in 1985. The combined total of containerized and bareroot seedlings shipped this past year was 23 709 961 seedlings. This brings the total shipped from Pine Ridge to 117 453 209 seedlings (Table B10).

The Seed Program processed 11 551 hectolitres (hl) of pine cones and 219 hl of white spruce cones. The total seed inventory decreased by 5 645 kilograms (kg) to a total of 44 789 kg.

Table B1

REGENERATION SURVEYS
1984 - 85

FOREST	ALBERTA FOREST SERVICE			INDUSTRY			GRAND TOTAL (ha)
	Stocked (ha)	Non-Stocked (ha)	Total (ha)	Stocked (ha)	Non-Stocked (ha)	Total (ha)	
Athabasca	1 015.6	70.7	1 086.3	24.7	310.7	335.4	1 421.7
Bow/Crow	1 176.1	787.1	1 963.2	337.9	7.0	344.9	2 308.1
Edson	64.1	13.1	77.2	4 358.2	935.2	5 293.4	5 370.6
Footner Lake	1 543.3	198.9	1 742.2	87.8	8.9	96.7	1 838.9
Grande Prairie	955.1	162.9	1 118.0	6 714.4	698.5	7 412.9	8 530.9
Lac La Biche	1 052.0	513.0	1 565.0	-	-	-	1 565.0
Peace River	503.5	1 072.0	1 575.5	1 017.6	73.9	1 091.5	2 667.0
Rocky/Clearwater	603.8	23.8	627.6	272.8	114.2	387.0	1 014.6
Slave Lake	2 838.0	292.0	3 130.0	221.4	80.6	302.0	3 432.0
Whitecourt	1 106.8	208.9	1 315.7	1 791.9	209.8	2 001.7	3 317.4
TOTAL	10 858.3	3 342.4	14 200.7	14 826.7	2 438.8	17 265.5	31 466.2

Table B2

TEN-YEAR SUMMARY
REGENERATION SURVEYS
1975 - 85

YEAR	ALBERTA FOREST SERVICE			INDUSTRY			GRAND TOTAL (ha)
	Stocked (ha)	Non-Stocked (ha)	Total Surveyed (ha)	Stocked (ha)	Non-Stocked (ha)	Total Surveyed (ha)	
1975-76	12 750	6 091	18 841	10 788	5 401	16 189	35 030
1976-77	11 055	6 226	17 281	8 715	8 297	17 012	34 293
1977-78	10 114	8 841	18 955	7 295	9 702	16 998	35 953
1978-79	10 271	2 696	12 967	12 126	8 779	20 905	33 872
1979-80	10 315	3 154	13 469	13 620	6 938	20 558	34 027
1980-81	8 322	1 614	9 936	17 237	6 083	23 321	33 257
1981-82	9 701	2 874	12 575	14 262	3 668	17 930	30 505
1982-83	8 434	2 600	11 034	13 893	3 090	16 983	28 017
1983-84	13 014	4 137	17 151	15 027	3 212	18 239	35 390
1984-85	10 858	3 342	14 201	14 827	2 439	17 265	31 466

Table B3

REFORESTATION WORK CONDUCTED BY THE ALBERTA FOREST SERVICE
1984 - 85

FOREST	Scarification (ha)	Seeding (ha)	CONES COLLECTED			Thinning (ha)	SEEDLINGS PLANTED			
			Pine (hl)	Spruce (hl)	Other (hl)		Conventional (number)	(ha)	Container (number)	(ha)
Athabasca	609.5	-	-	-	-	-	112 400	82.6	474 850	418.7
Bow/Crow	866.4	404.6	730.0	-	-	-	241 648	212.3	11 712	10.3
Edson	401.5	-	-	-	-	-	44 185	29.6	271 537	185.2
Footner Lake	-	1 403.0	-	-	-	-	-	-	1 137 633	872.1
Grande Prairie	128.2	1 167.0	-	-	-	-	-	-	182 272	134.4
Lac La Biche	263.5	87.0	-	-	-	-	897 307	840.2	-	-
Peace River	470.4	-	-	-	-	-	-	-	1 495 081	1 335.5
Rocky/Clearwater	418.0	234.2	392.8	-	-	-	165 575	146.9	361 101	320.5
Slave Lake	1 991.0	2 007.0	5.3	-	-	9.1	538 289	397.7	547 710	381.3
Whitecourt	1 762.5	-	-	-	-	58.5	122 850	115.7	2 227 010	1 850.4
TOTAL	6 911.0	5 302.8	1 128.1	-	-	67.6	2 122 254	1 825.2	6 708 906	5 508.4

Table B4

REFORESTATION AND SILVICULTURE IMPROVEMENT WORK BY THE FOREST INDUSTRY
1984 - 85

FOREST	Scarification (ha)	Seeding (ha)	CONES COLLECTED		Thinning (ha)	SEEDLINGS PLANTED			
			Pine (hl)	Spruce (hl)		Conventional (number)	(ha)	Container (number)	(ha)
Athabasca	-	-	-	-	-	45 400	43.0	132 480	127.9
Bow/Crow	122.4	-	384.1	29.4	-	-	-	32 850	43.8
Edson	5 508.3	313.2	108.5	-	-	22 163	20.6	3 155 017	2 949.8
Footner Lake	463.0	996.2	-	-	-	-	-	65 000	50.6
Grande Prairie	2 284.2	1 473.1	6 500.0	-	270.3	623 000	530.0	1 770 240	1 462.6
Lac La Biche	-	-	-	-	-	2 000	1.2	-	-
Peace River	-	-	-	-	-	139 926	123.2	22 444	27.5
Rocky/Clearwater	370.9	-	236.7	507.0	-	11 600	9.7	109 000	90.8
Slave Lake	314.5	210.2	-	67.0	-	10 320	9.7	440 888	356.1
Whitecourt	2 107.3	139.8	-	-	171.7	240 400	171.7	621 700	444.1
TOTAL	11 170.6	3 132.5	7 229.3	603.4	442.0	1 094 809	909.1	6 349 619	5 553.2

Table B5

TEN-YEAR SUMMARY
REFORESTATION BY THE ALBERTA FOREST SERVICE
1975 - 85

Year	Scarification (ha)	Seeding (ha)	Thinning (ha)	Seedlings Planted			
				Conventional (number)	(ha)	Container (number)	(ha)
1975-76	6 697	1 885	104	** 943 702	*	3 514 664	*
1976-77	4 757	2 898	546	*** 827 520	*	2 294 659	*
1977-78	6 684	4 782	111	224 478	*	2 378 730	*
1978-79	10 152	4 653	11	94 118	*	2 053 885	*
1979-80	6 324	3 325	15	-	*	4 898 809	*
1980-81	6 102	4 687	-	769 200	500	3 753 887	3 032
1981-82	5 964	3 127	251	5 941 149	4 021	2 246 687	1 474
1982-83	8 131	3 212	543	3 491 120	2 659	3 711 654	2 739
1983-84	8 118	5 617	218	4 720 073	3 496	5 896 422	4 051
1984-85	6 911	5 303	68	2 122 254	1 825	6 708 906	5 508

* Information not available
** Includes 82 032 wildlings planted
*** Includes 137 776 wildlings planted

Table B6

TEN-YEAR SUMMARY
REFORESTATION BY THE FOREST INDUSTRY
1975 - 85

Year	Scarification (ha)	Seeding (ha)	Thinning (ha)	Seedlings Planted	
				Conventional (Number)	Container (Number)
1975-76	10 840	2 862	40	1 329 364	1 732 820
1976-77	9 849	3 427	37	103 675	3 284 978
1977-78	10 292	5 328	20	-	4 253 860
1978-79	10 244	2 852	234	44 500	6 164 579
1979-80	8 819	2 218	256	-	5 430 000
1980-81	6 483	1 947	215	30 250	6 773 830
1981-82	7 604	1 573	383	142 500	6 484 160
1982-83	8 480	2 158	152	2 729 361	4 201 510
1983-84	11 489	3 357	27	1 754 256	4 218 055
1984-85	11 171	3 133	442	1 094 809	6 349 619

Table B7

SUMMARY OF MAINTAINING OUR FORESTS PROGRAM
REFORESTATION WORK
1984 - 85

Forest	SITE PREPARATION		SEEDLINGS PLANTED				CONES COLLECTED			THINNING	AERIAL SEEDLING
	Land Clearing (ha)	Scarifi-cation (ha)	Conventional (number)	(ha)	Container (number)	(ha)	Pine (hl)	Spruce (hl)	Other Specify (hl)	(ha)	(ha)
Footner Lake	-	1 939	-	-	1 096 000	682	-	-	-	-	170
Lac La Biche	1 216	1 086	1 735 204	1 152	1 212 437	767	-	-	-	-	-
Peace River	-	3 668	-	-	2 205 520	1 864	-	-	-	-	-
Slave Lake	-	2 066	3 200 000	2 686	900 000	601	-	-	-	-	233
Edson	-	-	-	-	-	-	-	-	-	202	-
Rocky/Clearwater	-	-	-	-	-	-	-	-	-	117	-
Whitecourt	-	-	-	-	-	-	-	-	-	-	-
TOTAL	1 216	8 759	4 935 204	3 838	5 413 957	3 914	-	-	-	319	403

Table B8

MAINTAINING OUR FORESTS
REFORESTATION SURVEYS
1984 - 85

Forest	STOCKING SURVEYS		
	Aerial Reconnaissance (ha)	Ground Reconnaissance (ha)	Ground Intensive (ha)
Footner Lake	93 000	-	1 769
Lac La Biche	-	1 082	-
Peace River	-	-	562
Slave Lake	-	-	1 820
TOTAL	93 000	1 082	4 151

Table B9

PINE RIDGE FOREST NURSERY SEED PROGRAM
1982-1985

Pine	1982-83	1983-84	1984-85
Cones received (hl)	17 973	6 854	6 235
Cones processed (hl)	12 241	6 757	11 551
Seed cleaned (kg)	2 660	1 674	2 955
Seed stored (kg)	11 061	10 727	11 993
Spruce			
Cones received (hl)	5 900	11 330	219
Cones processed (hl)	5 900	11 330	219
Seed cleaned (kg)	6 580	13 895	160
Seed stored (kg)	32 024	38 900	32 010
Other Species			
Cones received (hl)	-	159	-
Cones processed (hl)	-	159	-
Seed cleaned (kg)	-	150	-
Seed stored (kg)	-	807	786

Table B10

PINE RIDGE FOREST NURSERY BAREROOT AND CONTAINER SEEDLING PROGRAM
1982 - 1985

Program	1982-83		1983-84		1984-85	
	Pine	Spruce	Pine	Spruce	Pine	Spruce
BAREROOT PROGRAM						
Seedlings grown:						
Age 0 - 1.0 years	500 000	10 870 000	500 000	5 790 000	60 000	4 964 000
Age 1.0 - 2.0 years	986 800	21 939 400	1 470 300	14 365 100	954 330	9 173 136
Age 2.0 - 3.0 years	1 120	9 144 649	-	18 779 892	-	12 431 741
Seedlings lifted	1 110 400	9 442 082	643 900	6 724 705	736 500	11 194 330
Seedlings shipped	1 586 285	5 751 427	755 625	8 793 511	643 900	8 739 373
CONTAINER PROGRAM						
Seedlings grown	1 856 272	15 859 472	1 736 897	18 487 020	1 351 494	11 096 227
Seedlings shipped	810 195	12 890 431	1 980 806	20 539 310	1 639 712	12 686 976

C. FOREST LAND USE

1. Introduction

The following information pertains to forest land use activities of the Alberta Forest Service.

2. Range Management

The AFS managed 536 grazing dispositions outside the Rocky Mountain Forest Reserve. These are summarized in Table C1.

Table C1

GREEN AREA GRAZING DISPOSITIONS
OUTSIDE THE ROCKY MOUNTAIN FOREST RESERVE
1984 - 85

Forest	*Active Dispositions	Hectares	AUM	Annual Range Inspections	Renewal/New Reports Received	Current Range Improvement Projects
Athabasca	2	913	458	-	1	-
Bow/Crow	71	56 429	38 547	32	8	17
Edson	67	17 493	9 796	40	26	-
Footner Lake	-	-	-	-	-	-
Grande Prairie	80	59 170	23 420	42	18	5
Lac La Biche	15	3 552	2 186	8	6	2
Peace River	16	5 779	2 929	8	7	2
Rocky/Clearwater	139	83 511	35 757	102	41	24
Slave Lake	70	16 769	9 669	45	18	2
Whitecourt	76	21 974	12 298	52	24	18
TOTAL	536	265 590	135 060	329	149	70

*Dispositions include Grazing Leases, Forest Grazing Licenses, Grazing Permits and Head Tax Permits.

In the Rocky Mountain Forest Reserve, the number of Animal Unit Months (AUM) of grazing utilized was 73 728 AUM. A total of 24 893 head of adult livestock grazed on 85 allotments. The revenue collected was $159 184 from 268 permits issued. These are summarized in Table C2.

Table C2

ROCKY MOUNTAIN FOREST RESERVE
1984 - 85

Forest Ranger Districts	Allotments	Revenue ($)	Permits	Adult Stock	AUM Utilized
B/C - DB1	11	38 589.00	52	6 384	18 668
B/C - DB2	5	8 148.00	16	1 359	4 061
B/C - DB4	9	11 983.00	9	1 451	5 797
B/C - DB5	10	11 328.00	17	1 483	5 153
B/C - DB6*	43	81 817.00	164	13 266	36 541
R/C - DR5	7	7 319.00	10	950	3 508
TOTAL	85	159 184.00	268	24 893	73 728

*Includes Waldron Co-op

There were 139 head of stock including calves found dead or missing by various means on the Forest Reserves.

Within the Green Area, the AFS administers two range improvement programs: (1) Public Grazing Land and (2) Forest Reserve Range Improvement Programs.

Public grazing land range improvement statistics are summarized in Table C3.

Table C3

PUBLIC GRAZING LAND RANGE IMPROVEMENT PROGRAM
1984 - 85

Forest	Clearing and Piling (ha)	Breaking (ha)	Working Down (ha)	Repiling (ha)	Seeding and Fertilizing (ha)	Dugouts	Cross Fencing (km)
Athabasca	-	-	-	-	-	-	-
Bow/Crow	373	23	-	280	-	-	1.6
Edson	-	-	-	-	-	-	-
Grande Prairie	-	57	-	-	23	5	-
Lac La Biche	-	32	32	-	32	-	-
Peace River	38	-	34	-	-	-	-
Rocky/Clearwater	219	71	110	97	152	2	0.1
Slave Lake	23	-	18	-	36	-	-
Whitecourt	374	16	32	26	12	-	6.0
TOTAL	1 027	199	226	403	255	7	7.7

The range improvements carried out by the AFS on allotments in the Rocky Mountain Forest Reserve are summarized in Table C4.

Table C4

AFS RANGE ALLOTMENT IMPROVEMENT PROGRAM
1984 - 85

Allotments	Clearing and Piling (ha)	Repiling (ha)	Vegetation Control (ha)	Seeding (ha)
North Sheep	-	263	*82	-
South Sheep	449	-	-	-
Willow Creek	-	-	-	162
Jumping Pound	-	-	**110	-
TOTAL	449	263	192	162

*Mowing
**Herbicide

3. Petroleum and Natural Gas

An increased use of forest lands by the petroleum and natural gas industry was evidenced by a 28 per cent increase in applications processed for land surface rights. Table C5 shows the applications processed by forest for the last five years.

Table C5

APPLICATIONS PROCESSED FOR LAND SURFACE RIGHTS
FOR THE PETROLEUM AND NATURAL GAS INDUSTRY
1980 - 85

Forest	1980-81	1981-82	1982-83	1983-84	1984-85
Athabasca	179	147	58	128	245
Bow/Crow	83	63	62	69	61
Edson	310	260	204	150	158
Footner Lake	210	254	432	389	485
Grande Prairie	402	321	236	305	447
Lac La Biche	607	448	207	263	421
Peace River	245	298	303	242	284
Rocky/Clearwater	183	148	164	318	340
Slave Lake	625	456	693	918	1 156
Whitecourt	483	354	365	455	558
TOTAL	3 327	2 749	2 724	3 237	4 155

In addition, 1 287 amendments, 59 tree freeing applications and a total of 320 Sand and Gravel Dispositions and Miscellaneous Permits and Leases were approved and numerous holdings, land use restrictions and administrative reservations were processed.

Timber Damage Assessments on land dispositions were computed on 1 682 dispositions in 1984-85.

4. Watershed Management

As part of a continuing inventory program of precipitation and streamflow, a data network has been established. A total of 136 precipitation storage gauges, 18 water level recorders and 90 sediment sampling sites were collecting data in the Green Area in 1984-85. These are summarized by Forest in Table C6. In addition, the Tri-Creeks Watershed Study was transferred to the Forest Research Branch.

Table C6

PRECIPITATION AND STREAMFLOW NETWORK

Forest	Number of Precipitation Gauges	Frequency of Reading	Number of Water Level Recorders	Sediment Sampling Sites
Athabasca	1	semi-annually		
Bow/Crow	45	10 monthly 35 semi-annually	3	39
Edson	18	10 semi-annually 1 monthly		19
Footner Lake	4	semi-annually		
Grande Prairie	19	semi-annually	7	15
Lac La Biche	3	semi-annually		
Peace River	2	semi-annually		
Rocky/Clearwater	22	3 monthly 19 semi-annually	8	17
Slave Lake	11	semi-annually		
Whitecourt	11	10 semi-annually 1 monthly		

5. Forest Recreation

The AFS has continued to play a dual role in outdoor recreation:

1. As a primary land manager, implementing land use/resource management legislation and policies to protect recreation values and to regulate recreation activities.

2. As a public service agency, delivering a forest recreation program to provide a wide range of resource-oriented, dispersed, extensive outdoor recreation opportunities within an integrated resource management framework.

To these ends, a variety of programs and facilities have been developed and are maintained by the AFS throughout the Green Area. These include small, low-density auto access campgrounds and picnic areas, water access points, trail systems and staging areas for various activities, group camps and remote campsites. Basic services are provided at AFS Recreation Areas, such as toilets, garbage receptacles, firewood, tables, fire-rings, drinking water by hand pumps, and boat launches where a facility is located on a water body.

UPGRADING

A total of $590 000 was spent on upgrading existing recreation areas in 1984-85, broken down as follows:

Beaver Mines Lake
Waiparous Creek
Whitehorse Creek
Tanasiuk
North Wabasca Lake
Two Lakes
Machesis Lake (completion)
Hutch Lake (completion)
Fish Lake (Phase II)
Medicine Lake
Elk Creek
Prairie Creek (Phase I)
Iosegun Lake
Stoney Lake
Meander River (completion)
Steen River (completion)

NEW CONSTRUCTION

No new construction of recreation facilities was undertaken by the AFS in 1984-85.

Following is a detailed listing of the formal Forest Recreation Areas (Tables C7, C8, C9 and C10) operated and maintained by the AFS.

Table C7

FOREST RECREATION AREAS

FOREST	RECREATION AREA	CAMPING UNITS	DAY USE UNITS	LOCATION
Athabasca	Cascade Rapids Remote	11	-	95 km E of Fort McMurray
	Christina River Remote	2	-	25 km E of Fort McMurray
	Clausen's Landing Remote	4	-	103 km N of Fort McMurray
	Dore Lake	14	20	17 km N of Fort Chipewyan
	Engstrom Remote	4	-	72 km E of Fort McMurray
	Grayling Creek	34	6	45 km S of Fort McMurray
	Greentree Remote	2	-	35 km E of Fort McMurray
	(Little) Fishery Creek	-	4	Fort McMurray (Thickwood Heights)
	Magua Lake	37	30	40 km S of Fort McMurray
	Miseieutin Remote	4	-	52 km E of Fort McMurray
	Pearson Lake Remote	3	-	135 km N of Fort McMurray
	Six Lakes Remote	3	-	145 km NE of Fort McMurray
	Whitemud Falls Remote	4	-	107 km E of Fort McMurray
	TOTAL	122	60	
Bow/Crow	Allison Day Use	-	45	9 km NW of Crowsnest
	Beaver Creek Overflow	10	-	40 km NE of Pincher Creek
	Beaver Mines Lake	87	9	30 km SE of Crowsnest
	Burnt Timber	30	10	65 km SW of Sundre
	Cartier Creek	-	60	22 km SW of Sundre
	Castle Falls	49	15	29 km SW of Crowsnest
	Castle River Bridge	30	10	23 km SW of Crowsnest
	Chinook	74	20	12 km NW of Crowsnest
	Deer Creek Day Use	-	10	45 km SW of Sundre
	Dutch Creek	42	8	30 km NE of Crowsnest
	Fallen Timber	68	40	80 km NW of Cochrane
	James-Wilson	25	10	40 km NW of Sundre
	Livingstone Falls	22	6	60 km N of Crowsnest
	Lynx Creek	30	10	20 km SW of Crowsnest
	North Ghost	188	15	55 km NW of Cochrane
	Oldman River	10	4	40 km N of Crowsnest
	Racehorse Creek	37	5	25 km N of Crowsnest
	Red Deer River	77	20	55 km SW of Sundre
	South Ghost Snowmobile	-	15	43 km NW of Cochrane
	Syncline X-C Skiing	-	50	18 km SW of Crowsnest
	Waiparous Creek	59	10	48 km NW of Cochrane
	Waiparous Valley Viewpoint	-	10	75 km NW of Cochrane
	Wildhorse	4	10	70 km W of Sundre
	TOTAL	842	392	

Table C7 Continued

FOREST	RECREATION AREA	CAMPING UNITS	DAY USE UNITS	LOCATION
Edson	Big Berland	20	10	70 km NW of Hinton
	Cardinal River Divide	–	8	80 km SE of Hinton
	Cardinal River	27	–	91 km SE of Hinton
	Coalspur	8	4	10 km S of Robb
	Eccles Pond Day Use	–	8	60 km W of Edson
	Emerson Lakes	17	10	56 km NW of Hinton
	Fairfax Lake	19	1	105 km SW of Edson
	Fickle Lake	32	30	39 km SW of Edson
	Grande Cache (Blue Bridge)	23	10	1 km N of Grande Cache
	Grande Cache Lake Day Use	–	28	2 km N of Grande Cache
	Hell's Gate	10	8	10 km N of Grande Cache
	Kinky Lake	11	6	22 km SW of Hinton
	Lambert Creek	7	4	30 km S of Edson
	Little Sundance Creek	8	10	35 km W of Edson
	Lovett River	17	–	40 km S of Robb
	Mason Creek Day Use	–	16	15 km E of Grande Cache
	McLeod River	22	8	26 km SE of Hinton
	Obed Lake	12	4	45 km W of Edson
	Pembina Forks	20	10	109 km S of Edson
	Pierre Greys Lakes	86	23	120 km NW of Hinton
	Pierre Greys X-C Skiing	–	14	120 km NW of Hinton
	Rock Lake	54	10	86 km NW of Hinton
	Steeper Water Access Point	12	–	26 km SW of Robb
	Watson Creek	40	–	65 km SE of Hinton
	Whitehorse Creek	12	–	72 km S of Hinton
	Wildhorse Lake	14	8	25 km SW of Hinton
	TOTAL	471	230	
Footner Lake	Buffalo River Day Use	–	6	24 km SW of Rainbow Lake
	Buffalo Tower Day Use	–	10	50 km S of Fort Vermilion
	Hutch Lake	11	10	36 km N of High Level
	Hutch Lake Day Use	–	12	34 km NW of High Level
	Machesis Lake	21	10	60 km SE of High Level
	Meander River	7	5	80 km N of High Level
	Rainbow Lake	16	–	65 km S of Rainbow Lake
	Semo Lake Remote	5	–	24 km N of Foggy Tower
	Senex	11	–	120 km S of Fort Vermilion
	Steen River	6	–	150 km N of High Level
	Tall Cree Crossing	8	20	70 km SE of Fort Vermilion
	Watt Mountain	–	4	37 km NW of High Level
	TOTAL	85	77	

Table C7 Continued

FOREST	RECREATION AREA	CAMPING UNITS	DAY USE UNITS	LOCATION
Grande Prairie	Bison Flats	19	22	157 km SE of Grande Prairie
	Cut Bank River Random	10	-	100 km S of Grande Prairie
	Economy Lake	10	7	38 km S of Goodwin
	Hilltop Lake	-	15	26 km SW of Woking
	Musreau Lake	75	20	80 km S of Grande Prairie
	Nose Lake Remote	6	-	130 km S of Grande Prairie
	Simonette River	23	14	19 km SW of Debolt
	Smoky River	-	20	35 km E of Grande Prairie
	Two Lakes	83	25	130 km SW of Grande Prairie
	Waskahigan River	15	15	3 km NW of Little Smoky
	Westview	-	8	100 km SE of Grande Prairie
	TOTAL	241	146	
Lac La Biche	Calling River	-	7	130 km NE of Athabasca
	Caribou Creek Remote	4	-	56 km N of Wandering River
	Crow Lake Remote	12	14	130 km S of Fort McMurray
	House River	10	-	55 km N of Wandering River
	Ironwood Lake Day Use	10	-	58 km SE of Lac La Biche
	Jackson Lake Trail Staging Area	-	10	35 km E of Lac La Biche
	Marianna Lakes	14	10	90 km S of Fort McMurray
	Mile 18 Lake	10	-	50 km N of Lac La Biche
	Pinehurst Lake	33	-	68 km SE of Lac La Biche
	Seibert Lake	36	12	77 km NW of Bonnyville
	Tanasiuk	51	25	130 km N of Athabasca
	Touchwood Lake	91	10	46 km NE of Lac La Biche
	Wandering River	14	4	90 km N of Boyle
	Waskahigan	7	-	68 km N of Wandering River
	Winefred Lake Remote	6	-	SW shore of Winefred Lake
	Wolf Lake	71	14	56 km NW of Bonnyville
	TOTAL	369	106	
Peace River	Ole's Lake	16	8	98 km W of Hines Creek
	Running Lake	19	28	32 km NW of Worsley
	Stoney Lake	15	8	40 km N of Hines Creek
	Sulphur Lake	18	14	55 km NW of Dixonville
	TOTAL	68	58	
Rocky/ Clearwater	Aylmer Water Access/Staging	17	-	14 km S of Nordegg
	Blackstone	7	-	30 km N of Nordegg
	Blackstone Viewpoint	-	6	30 km N of Nordegg

Table C7 Continued

FOREST	RECREATION AREA	CAMPING UNITS	DAY USE UNITS	LOCATION
Rocky/ Clearwater cont'd	Brazeau Reservoir	71	13	25 km SW of Lodgepole
	Brazeau River	10	6	72 km N of Nordegg
	Brown Creek	12	5	45 km N of Nordegg
	Brown Creek Viewpoint	-	3	45 km N of Nordegg
	Chambers Creek	26	6	30 km W of Rocky Mountain House
	Cow Lake Water Access	30	-	13 km S of Rocky Mountain House
	Crescent Falls	6	10	25 km SW of Nordegg
	Cutoff Creek Staging	-	10	90 km W of Caroline
	Elk Creek	13	10	65 km S of Nordegg
	Elk River	13	-	75 km W of Lodgepole
	Fish Lake	91	30	8 km W of Nordegg
	Gold Eye Lake	44	10	11 km W of Nordegg
	Harlech	11	7	13 km E of Nordegg
	Haven Creek	8	-	14 km W of Nordegg
	Horberg Water Access Pt.	20	-	35 km W of Rocky Mountain House
	Jackfish Lake	7	8	53 km W of Rocky Mountain House
	Jacknife Springs	-	8	8 km SW of Lodgepole
	Kootenay Plains (Two O'Clock Creek)	22	8	67 km W of Nordegg
	Medicine Lake	39	22	37 km NW of Rimbey
	Mitchell Lake	5	-	19 km S of Rocky Mountain House
	North Ram River	20	15	32 km S of Nordegg
	Peppers Lake	24	-	84 km SW of Rocky Mountain House
	Phyllis Lake	8	2	16 km W of Caroline
	Prairie Creek	49	20	41 km SW of Rocky Mountain House
	Ram Falls	40	-	64 km S of Nordegg
	Saunders Water Access Pt.	15	-	28 km SE of Nordegg
	Seven Mile	38	15	80 km SW of Caroline
	Shunda Beaver Dam	7	20	5 km E of Nordegg
	Shunda Beaver Dam Overflow	87	-	5 km E of Nordegg
	Siffleur Falls Staging	-	20	67 km W of Nordegg
	South Fork Prairie Creek	13	-	28 km SW of Rocky Mountain House
	Strachan	23	15	31 km SW of Rocky Mountain House
	Struble Lake (Water Access Point)	16	-	23 km S of Rocky Mountain House
	Swan Lake	16	6	65 km SW of Rocky Mountain House
	Thompson Creek	59	6	87 km SW of Nordegg
	Upper Shunda Creek	21	18	3 km NW of Nordegg
	TOTAL	888	299	
Slave Lake	Chain Lakes Water Access Pt	30	-	45 km NE of Athabasca
	Chrystina Lake Water Access Point	18	-	15 km NE of Swan Hills

Table C7 Continued

FOREST	RECREATION AREA	CAMPING UNITS	DAY USE UNITS	LOCATION
Slave Lake cont'd	Lawrence Lake	27	14	48 km NW of Athabasca
	North Wabasca	43	1	142 km N of Slave Lake
	Peerless Lake	17	-	241 km NE of Slave Lake
	West Fawcett Lake	29	16	27 km N of Smith
	TOTAL	164	31	
Whitecourt	Freeman River	10	-	16 km S of Swan Hills
	Iosegun Lake	30	10	11 km N of Fox Creek
	Smoke Lake	47	-	13 km SW of Fox Creek
	Swan Hills (Freeman Lake)	10	-	8 km W of Swan Hills
	Wolf Lake	27	10	69 km SE of Edson
	TOTAL	124	20	

Table C8

GROUP CAMPGROUNDS

FOREST	NAME	SHELTER	WATER WELL	HORSE CORRALS	LOCATION
Bow/Crow	Ghost Airstrip	X	X		68 km NW of Cochrane
	Highwood	X	X		35 km SW of Longview
	North Fork (Equestrian)	X	X	X	15 km W of Millarville
	North Ghost	X	X		70 km NW of Cochrane
	Oldman River (Equestrian)	X	X	X	40 km N of Crowsnest
	Syncline A	X	X		28 km S of Crowsnest
	Syncline B	X	X		28 km S of Crowsnest
	Waiparous Creek	X	X		65 km NW of Cochrane
Edson	Weald	X	X		37 km SW of Edson
	Wild Hay River	X			48 km NW of Hinton
Grande Prairie	Big Mountain Creek	X	X		30 km S of Grande Prairie
	Shuttler Flats	X	X		50 km SW of Grande Prairie
Lac La Biche	Shaw Lake	X	X		30 km E of Lac La Biche
Peace River	Sulphur Lake	X	X		78 km NW of Hines Creek
Rocky/ Clearwater	Cavalcade A		X		64 km W of Nordegg
	Cavalcade B		X		64 km W of Nordegg
	Cavalcade C		X		64 km W of Nordegg
	Chambers Creek	X	X		30 km W of Rocky Mtn. House
	Prairie Creek	X	X		41 km SW of Rocky Mtn. House
	Snow Creek	X			16 km W of Nordegg
Whitecourt	Eagle River	X	X		11 km NW of Whitecourt
	Minnow Lake	X	X		24 km S of Hwy 16 on Wold Lake Road

Table C9

AFS TRAILS PROGRAM

FOREST	NAME/TYPE	km TRAILS	LOCATION
Athabasca	Little Fishery Creek X-C Ski/Hiking	10	Adjacent to SW City boundary of Fort McMurray
Bow/Crow	Syncline (Castle) X-C Ski/Hiking	13	18 km S of Crowsnest
	Allison/Chinook X-C Ski/Hiking	17	9 km NW of Crowsnest
	North Ghost X-C Ski/Hiking	7	70 km NW of Cochrane
	Carbondale Snowmobile	40	20 km S of Crowsnest
	South Ghost Snowmobile/ATV	179	45 km NW of Cochrane
	Ghost Trail Bike	21	45 km NW of Cochrane
Edson	Hornbeck X-C Ski/Hiking	25	18 km NW of Edson
	Pierre Grey's Lakes X-C Ski/Hiking	9	100 km N of Hinton
	Little Sundance Snowmobile/ATV	75	24 km NW of Edson
Grande Prairie	Big Mountain Creek Snowmobile/ATV	140	30 km S of Grande Prairie
Rocky/Clearwater	Chambers Creek Snowmobile/ATV	87	30 km W of Rocky Mountain House
Whitecourt	Sandhills X-C Ski/Hiking	24	8 km E of Whitecourt
	Eagle River Snowmobile/ATV	60	13 km NW of Whitecourt
	Iosegun Lake Snowmobile/ATV	82	11 km NE of Fox Creek
	Krause Lake Snowmobile/ATV	60	6 km S of Swan Hills

Table C10

SUMMARY OF DEVELOPED RECREATION AREAS AND FACILITIES BY FOREST

FOREST	AUTO-ACCESS CAMP-GROUNDS	CAMPING UNITS	DAY USE UNITS	GROUP CAMPS	REMOTE CAMPSITES	WATER ACCESS POINTS	OVERFLOW AREAS	TRAILS (km)
Athabasca	4	122	60	-	9	-	-	10
Bow/Crow*	19	842	392	8	-	1	1	277
Edson	22	471	230	2	-	3	-	109
Footner Lake	11	85	77	-	1	-	-	-
Grande Prairie	10	241	146	2	1	2	-	140
Lac La Biche	12	369	106	1	3	2	-	-
Peace River	4	68	58	1	-	-	-	-
Rocky/Clearwater	33	888	299	6	-	5	2	87
Slave Lake	4	164	31	-	-	-	2	-
Whitecourt	5	124	20	2	-	-	-	226
TOTAL	124	3 374	1 419	22	14	13	5	849

Funds for operation and maintenance of the above recreation developments totalled approximately $2.8 million in 1984/85 (includes funding for Forest Guardians).

*Note: 12 recreation areas were transferred to Recreation and Parks as part of Kananaskis Country.

6. Geophysical

The timber damage assessment rate for new clearing in the Green Area remained at $214.03 per hectare. The rate for re-use of existing lines remained at $46.19 per hectare. These rates are established by the Timber Management Branch and are directly related to the average rate of timber dues for the previous year. Exploration activity for geophysical applications are summarized in Table C11.

Table C11

EXPLORATION ACTIVITY FOR OIL AND GAS ON PUBLIC FOREST LANDS, 1972-1985 GEOPHYSICAL APPLICATIONS

Year	Preliminary Plans Approved	New Lines Cut (km)	Existing Lines Used (km)
1972-73	273	3 605	3 513
1973-74	401	3 953	4 365
1974-75	205	2 554	2 541
1975-76	325	2 148	3 714
1976-77	387	5 786	5 641
1977-78	639	9 551	9 310
1978-79	743	11 076	10 796
1979-80	676	10 048	9 788
1980-81	643	16 333	13 681
1981-82	652	14 644	14 078
1982-83	689	17 720	37 633
1983-84	837	24 256	16 580
1984-85	934	16 600*	18 352*

* Estimated

7. Revenue

Timber damage assessments, forest protection levies and Crown Dues amounted to $5 037 860 in 1983-84 and are estimated at $4 200 000 for 1984-85.

D. FOREST PROTECTION

1. Introduction

A return to very dry conditions in 1984 resulted in an early start of the fire season which in turn resulted in the second highest fire incidence in Alberta's history. A total of 1 370 fires occurred during the year, including 654 fires over a 16-day period from July 25 to August 9. A record 132 fire starts occurred on August 3. A total of 78 965 ha were burned, 42 620 ha of which were in limited action zones.

Measurable proof of the benefits of the Presuppression Preparedness System were obtained, and with on-going refinement, additional success-rate/cost benefits will be achieved.

Table D1

TEN-YEAR SUMMARY
COMPARISON OF FIRE CAUSES BY PERCENTAGES
1975-1984

CAUSE	1975	1976	1977	1978	1979	1980	1981	1982	1983	1984	10 yr Avg.
Recreation	26.4	17.6	26.4	19.3	23.2	10.1	14.7	13.2	18.8	6.6	17.6
Resident	11.4	13.4	10.4	7.4	4.3	14.8	8.8	9.9	12.6	8.3	10.1
Railroads	2.2	1.4	4.5	3.7	0.5	1.4	1.4	2.0	1.3	0.9	1.9
Lightning	29.3	23.8	23.7	42.4	51.8	45.2	55.4	55.4	41.8	64.6	43.4
Forest industry	3.3	3.6	2.5	0.8	1.0	1.8	1.1	0.4	2.5	1.2	1.8
Other industry	3.2	6.2	9.4	6.0	6.9	8.0	4.3	5.6	7.9	6.7	7.3
Incendiary	8.5	20.8	9.4	8.0	5.7	9.0	4.5	4.2	6.2	4.7	8.1
Misc. known	10.4	7.5	10.3	8.9	5.1	8.0	6.4	6.9	5.8	6.0	7.5
Unknown	3.0	4.4	1.1	2.0	1.5	1.9	2.4	2.4	3.0	1.0	2.3
Public project	2.3	1.3	2.3	1.7	*						

* As of 1979 all public project fires were included in Other industry.

Table D2

FIVE-YEAR SUMMARY
AIRCRAFT
1980 - 84

	1980		1981		1982		1983		1984	
Aircraft	No.	Hours	No.	Hours	No.	Hours	No.	Hours	No.	Hours
Helicopters	206	27 525	248	38 311	251	42 659	177	21 146	184	26 358
Fixed Wing	140	11 311	198	9 149	155	11 224	104	8 981	134	5 384
Air Tankers	48	4 415	52	5 281	40	3 306	18	808	28	2 435
TOTAL	394	43 251	498	52 741	446	57 189	299	30 935	346	23 177

Table D3

TEN-YEAR SUMMARY
FIRES
1975 - 84

Year	Total Fires	*Non-Forested (ha)	*Forested (ha)	*Total Area (ha)	Suppression Costs ($)
1975	693	1 632	4 156	5 789	3 951 032
1976	774	5 313	17 124	22 473	3 681 894
1977	556	6 049	3 981	10 030	1 176 666
1978	653	5 017	2 773	17 790	2 787 901
1979	1 000	509	194 088	194 597	8 679 644
1980	1 348	204 054	465 106	669 159	26 805 764
1981	1 522	419 928	943 784	1 363 712	51 835 642
1982	1 257	219 576	458 031	677 607	55 912 000
1983	756	1 048	1 215	2 263	4 294 476
1984	1 370	38 820	35 259	74 079	7 804 353

* Crown Land Only

Table D4

SUMMARY OF FOREST FIRE LOSSES
1984

FOREST	CLASS OF FIRE						LANDS AFFECTED - HECTARES						VOLUME LOSS		SUPPRESSION COSTS
							Crown Lands								
	A	B	C	D	E	TOTAL	Merch. Timber	Potent. Prod.	Non Prod.	Total Crown Land	Priv. Area	Total Area	Timber (m^3)	Other (m^3)	Total $
Athabasca	71	56	7	1	2	137	6 489.0	72.3	2 774.8	9 336.1	0.5	9 336.6	44 534	207 217	1 236 761
Bow/Crow	97	22	6	3	-	128	13.1	44.0	101.0	158.1	214.8	372.9	527	310	547 484
Edson	86	22	2	-	-	110	11.7	9.9	1.2	22.8	11.8	34.6	72	129	139 299
Footner Lake	80	127	28	4	15	254	14 457.7	13 247.0	35 315.4	63 020.1	3 176.6	66 196.7	31 234	328 332	3 197 291
Grande Prairie	40	17	2	-	-	59	10.4	3.2	10.5	24.1	17.4	41.5	5	-	125 250
Lac La Biche	102	71	12	3	1	189	119.5	131.8	137.4	388.7	443.2	831.9	59	233	687 119
Peace River	39	20	6	1	-	66	38.8	46.2	102.3	187.3	28.7	216.0	65	392	330 111
Rocky/Clearwater	98	35	4	1	1	139	234.8	12.4	41.9	289.1	93.6	382.7	16 753	3 350	313 262
Slave Lake	100	56	19	4	2	181	265.6	39.4	320.1	625.1	646.3	1 271.4	24 109	35 079	997 04[illegible]
Whitecourt	78	20	7	2	-	107	9.5	2.6	14.9	27.0	254.2	281.2	35	-	230 72[illegible]
TOTAL FORESTS	791	446	93	19	21	1 370	21 650.1	13 608.8	38 819.5	74 078.4	4 887.1	78 965.5	117 393	575 042	7 904 353
														Prevention, Presuppression and Preparedness Costs	33 610 946
														TOTAL	41 415 299

LEGEND

A - up to and including 0.1 ha
B - 0.2 to 4.0 ha
C - 4.1 to 40.0 ha
D - 40.1 to 200.0 ha
E - 200.1 ha +

Table D5

STATEMENT OF FIRES BY CAUSE, DISCOVERY AGENT, DAMAGE AND AREA BURNED
1984

CAUSE	DISCOVERED BY						DAMAGE ($)		LAND IN HETARES		
	Lookout Tower	Public	Ground Patrol	Fixed Wing Patrol	Rotary Wing Patrol	Other Aircraft	Productive	Potential	Crown	Private	Total
Lightning	393	36	6	69	275	106	2 836 424	84 240	65 182.8	0.6	65 183.4
Resident	41	51	9	2	8	3	2 814	-	883.0	1 717.6	2 600.6
Forest industry	4	8	2	-	1	1	1 334	-	6.2	2.1	8.3
Other industry	23	49	10	1	5	4	19 069	-	238.0	178.2	416.2
Railroad	6	5	-	-	2	-	6 132	138	103.9	7.3	111.2
Recreation	20	57	3	1	4	5	144 085	-	298.5	3.8	302.3
Incendiary	22	21	3	4	8	6	9 873	-	7 167.2	2 675.5	9 842.7
Misc. known	26	33	11	1	6	5	15 035	9 696	181.8	290.5	472.3
Unknown	3	6	3	-	1	1	-	-	17.0	11.5	28.5
TOTALS	538	266	47	78	310	131	3 034 766	94 074	74 078.4	4 887.1	78 965.5
PERCENTAGE	39.3	19.4	3.4	5.7	22.6	9.6			93.8	6.2	100.0

Table D6

STATEMENT OF FIRES BY CAUSE AND MONTHLY DISTRIBUTION
1984

CAUSE	NUMBER							MONTHLY DISTRIBUTION											
	A	B	C	D	E	TOTAL	%	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC
Lightning	574	253	41	4	13	885	64.6	-	-	-	-	13	95	248	529	-	-	-	-
Resident	28	49	27	7	3	114	8.3	3	9	7	49	17	9	10	5	-	1	4	-
Forest industry	10	6	-	-	-	16	1.2	-	2	2	4	2	3	-	1	1	-	1	-
Other industry	43	44	2	2	1	92	6.7	3	6	3	16	14	33	6	8	-	2	-	1
Railroad	5	6	1	1	-	13	0.9	-	-	-	3	4	2	3	1	-	-	-	-
Recreation	53	24	2	-	1	90	6.6	1	1	1	9	17	6	16	16	16	6	-	1
Incendiary	20	32	7	3	2	64	4.7	-	-	-	24	28	3	5	3	1	-	-	-
Misc. known	41	27	11	2	1	82	6.0	-	1	3	33	22	8	5	5	5	-	-	-
Unknown	7	5	2	-	-	14	1.0	-	-	1	5	3	2	2	-	1	-	-	-
TOTALS	791	446	93	19	21	1 370	100.0	7	19	17	143	120	161	295	568	24	9	5	2
%	57.7	32.6	6.8	1.4	1.5	100.0		0.5	1.4	1.2	10.4	8.8	11.8	21.5	41.5	1.8	0.7	0.4	0.1

HECTARES BY SIZE CLASS: A: 39.9 B: 526.1 C: 1 367.6 D: 1 691.4 E: 75 340.5

TOTAL ha BY MONTHS:

JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC
287.2	265.6	36.3	12 049.2	686.7	1 032.7	62 149.2	2 151.5	236.9	5.7	64.2	0.3

2. Insect and Disease Program

Mountain Pine Beetle

The mountain pine beetle infestation continued to be the major problem within this program. The number of lodgepole pine trees attacked appeared to have stabilized, with approximately 7 000 - 8 000 trees treated. However, attacks on limber pine created a major problem with over 20 000 trees being treated in the critical areas of the control zone. Most of the infested lodgepole pines in the salvage area have been logged. An overall reduction of population in the next year appears possible, with some signs of winter mortality appearing within both salvage and control zone.

Spruce Bark Beetle

Logging of trees attacked by spruce bark beetles was initiated during the past year in the Footner Lake and Peace River forests. Surveys of infested areas have not indicated any major increases in the beetle population. There are signs of the problem which will require a continuous monitoring program.

Dwarf Mistletoe

Treatment of dwarf mistletoe in some areas of the Athabasca Forest was initiated using helitack and initial attack fire crews. The program consisted of felling infested trees in the large 1981 and 1982 burn sites. Survey of the major mistletoe stands in the Bow/Crow forest was in the planning stage. The objective of this program was to pinpoint areas of severe infestation which would be placed into the priority of a timber management sequence plan.

E. FOREST RESEARCH

1. Introduction

In-house research programs were carried out in two major problem areas, reforestation and watershed. A modest new program regarding the stand dynamics of managed forests was maintained.

Funds were provided to other research agencies in the form of contracts and grants for the enhancement of research activities where our own expertise or facilities were not available. Some of these research studies included the following topics: development and testing of pheromones against mountain pine beetles; design of drainage systems for forested peatland; development and testing of biological repellants for reduction of hare damage in plantations; and applications of beneficial fungi.

Table E1

RESEARCH EXPENDITURES

Source of Funding	Number of Projects Funded	Total Expenditures ($)
Forest Development Research Trust Fund	9	127 967
Research contracts	16	359 258
TOTAL	25	487 225